

INSTRUCTION MANUAL



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SINLINE PRO 10000



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INTRODUCTION

Thank you for purchasing the EVER SINLINE PRO 10000 power supply unit. It belongs to a series of technologically advanced power supply units intended for servers, computer networks and data processing systems.

The UPS EVER SINLINE PRO 10000 has been designed in such a way as to best meet all your expectations regarding protection against the consequences of power outages.

The present instruction manual contains information on operating the device and sets forward the principles of safe usage. Please read the instruction manual thoroughly before operating the EVER SINLINE PRO 10000 power supply unit, for this will surely facilitate correct and trouble-free usage. The power supply unit has been manufactured in Poland, in full accordance with requirements introduced for the **CE symbol**.

GENERAL INFORMATION

INTENDED APPLICATION

Power supply unit of the SINLINE PRO 10000 series are class LINE-INTERACTIVE (VI) devices, intended for cooperation with equipment powered from a single-phase ~230 V power grid.



NOTE! SINLINE PRO 10000 power supply units are not intended for usage with medical life and/or health support systems.

GENERAL DESCRIPTION

- Sinusoidal output voltage, generated in battery operation mode;
- **DPC (Digital Power Control)** - Digital control of the power supply units operating parameters, such as:
 - output voltage shape,
 - output voltage frequency,
 - battery charge status,
 - battery voltage and current,
 - measurement of the capacity of a set of batteries,
 - life of batteries,
 - temperature of critical elements of the power supply unit;
- Digital measurement of external parameters, such as:
 - mains voltage value,
 - mains current value,
 - mains voltage frequency,
 - value of active and apparent power received from the mains,
 - coefficient of mains-side power,
 - value of active and apparent power connected to the power supply unit's output,
 - coefficient of output-side power,
- An automatic voltage regulation system (AVR), which increases and decreases;
- Mains voltage filtration;
- RS232 and USB serial ports for communication with a PC;
- Socket for adapter cards (e.g. a management card);
- Possibility of connecting additional battery packs;
- Possibility of browsing network event statistics;
- Calculating the current available emergency operation time;
- PowerSoft Personal software is used to control the power supply unit and automatically close the system;

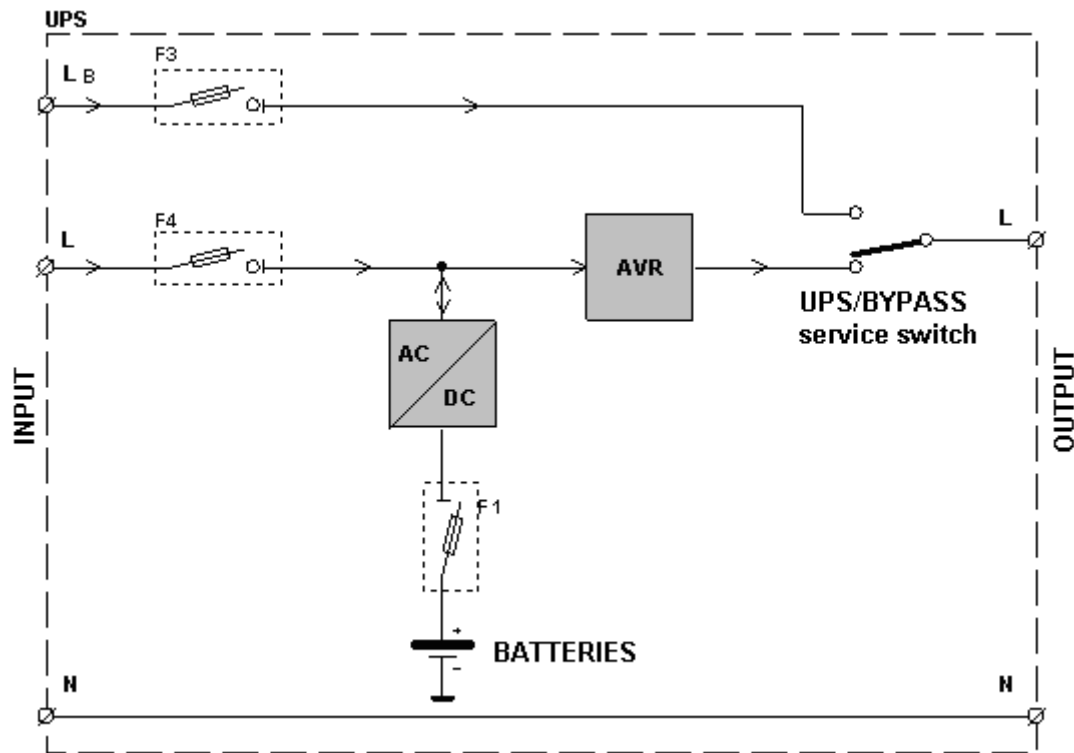


Figure 1: Simplified block diagram of the power supply unit

The SINLINE PRO 10000 power supply unit is a modern electronic device that serves as an autonomous source of sinusoidal 230 V voltage. The device belongs to the LINE-INTERACTIVE (VI) class of UPSs, which includes power supply units that synchronize with the power grid. The unit is equipped with the unique **CLEAR DIGITAL SINUS** (CDS) system that during battery operation generates a precisely stabilised output voltage with a sinusoidal shape, which makes it possible to power a broad range of loads that do not tolerate quasi-sinusoidal voltages. The application of this system increases the reliability of the device, guaranteeing its stable operation.

The **Automatic Voltage Regulation** (AVR) system allows the power supply unit to immediately correct even small drops and rises in mains voltage, so as to ensure that receivers enjoy the proper supply conditions without using up the power gathered in batteries.

What is more, the unit has been fitted with an advanced **DIGITAL POWER CONTROL** (DPC) system, which precisely shapes the course of the unit's output voltage so as to generate a purely sinusoidal voltage. During mains operation, the system filters the mains voltage in order to eliminate interferences and distortions that could be potentially harmful to receivers.

The dedicated DPC system controls the operation of the power supply unit, and has an extremely precise and rapidly acting system for detecting overloads and output short-circuits during battery operation. In mains operation mode, short-circuit protection is provided by fuses, with overloads being brought to the user's attention both audibly and optically.

A special soft start mode has been introduced, which allows trouble-free start-up with large loads that draw considerably start-up power, such as laser printers.

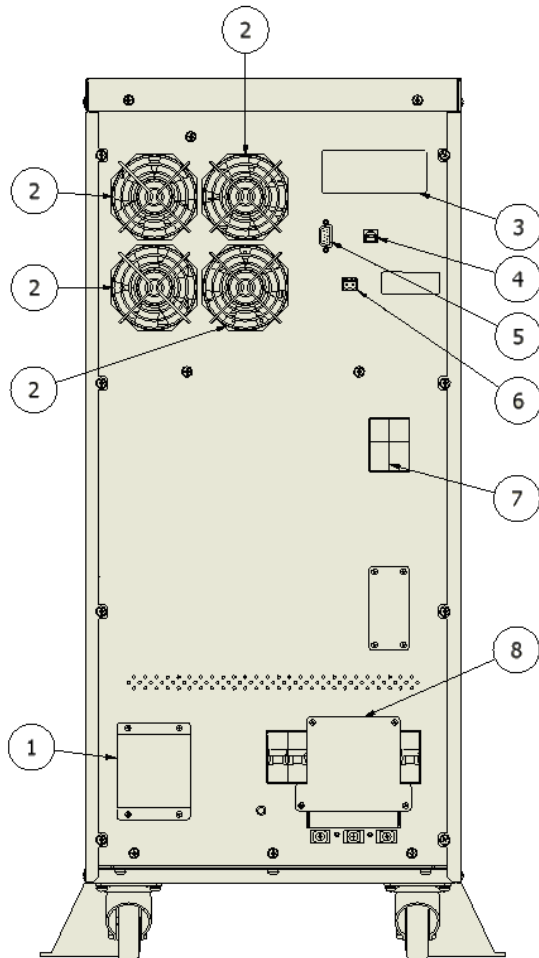
In addition, the DPC enables long-term battery operation of the power supply unit by allowing the user to connect an additional battery pack and control the internal temperature by means of an active cooling system, which is activated as required. This method of cooling activation reduces the noise generated by the unit and helps extend the life of fans.

The DPC system supports various methods of communication between the unit and a PC over a communication link or a special link for the connection of an EVER management card EVER (HTTP, telnet, SNMP).

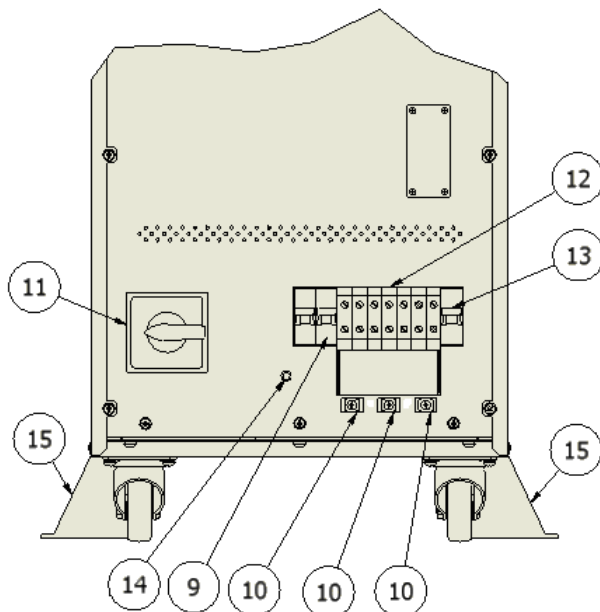
The unit performs precise measurements of its basic parameters, including battery voltage, power grid input voltage, unit output voltage, the power of connected loads, temperature, and of advanced parameters, such as the available battery capacity or backup mode operating time under current load.

The UPS utilises an innovative charging method, typically reserve for high-end power supply units. which is known as **CBC - COOL BATTERY CHARGING**; this system utilises elements of the internal converter for cold battery charging. In the mains operating mode, this function charges the batteries, while in battery operation mode it converts the internal energy of the battery to an alternating voltage that supplies the protected devices.

STRUCTURE



- 1) BYPASS switch cover
- 2) Fans
- 3) Adapter card slot plug
- 4) USB communication link
- 5) RS232 communication link
- 6) EPO link
- 7) Fusible cut-out for internal batteries
- 8) Connection links cover



- 9) AC input automatic fuses
- 10) Mechanical cable mounting grip
- 11) Service BYPASS switch/UPS
- 12) Connection link
- 13) Fusible cut-out for external battery packs
- 14) Device earthing point
- 15) Mounting holders

Figure 2: Views of the rear panel

USER INTERFACE

The user interface consists of a four-button keypad located on the upper cover of the power supply unit, an LCD, and three LEDs. They allow the user to monitor the unit's operating parameters, and also modify some of them. The method of using the interface and the meanings of individual parameters have been described hereunder.



Figure 3: View of the user interface

Table 1 Meanings of signalling diodes

Graphical symbol	Designation	Description
	LED 1	LED indicating the unit's operation mode: NORMAL/BACKUP
	LED 2	LED signalling activation of the AVR system
	LED 3	LED signalling activation of the EMERGENCY mode

Table 2 Optical (diode) signalling

LED 1	LED 2	LED 3	Operation mode
			UNKNOWN
		F	NORMAL
			BACKUP
			STANDBY
			READINESS
		*	EMERGENCY
			INIT
			STOP

F - the status may be configuration-dependent (none or red);

* - flashes

The unit is also equipped with an audible signalling system for its respective states (cf. table).

Table 3 Audible signalling

Action	Audible signalling
NORMAL mode	None
BACKUP mode	intermittent signal, rapidity dependent on the charge level of batteries (the more rapid the signal, the lower the battery charge level)
Forced switch to the STANDBY mode	intermittent signal - two successive short signals followed by a pause
EMERGENCY mode	Event dependent
Overload	continuous signal
Short circuit	rapid intermittent 50% / 50% signal
Overheat	slow intermittent 50% / 50% signal
EPO activation	intermittent sound/silence (1s / 5s) signal

All successive screens shown on the LCD are organised in a tree structure, as presented in the following figure.

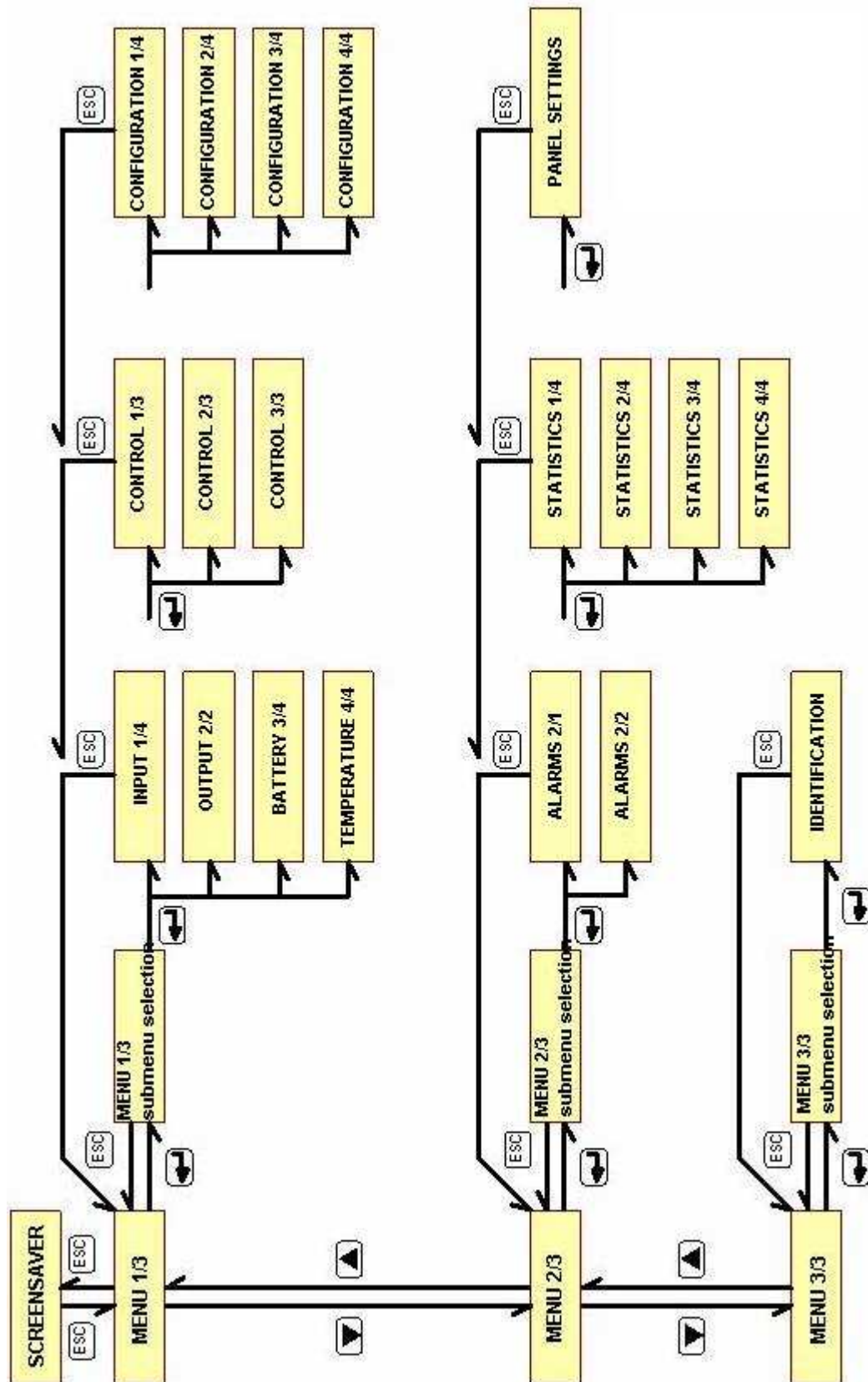


Figure 1: Organisation of screens

SCREENS

SCREENSAVER

Description: An information screen that is activated 5 minutes after the last press of a button. This is accompanied by the switching off of the LCD panel's backlight.

Type: read

Parameters

Qak	– charge level of batteries
Uak	– battery section voltage
Owy	– load handled by the power supply unit
Tau	– anticipated autonomous time of the power supply unit
TrybPracy	– operation mode of the power supply unit
i, a:	– additional information as per the table

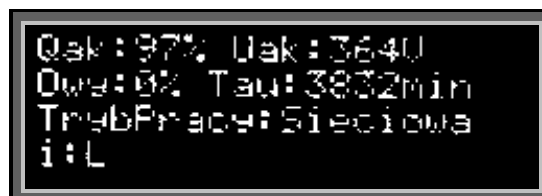
Information	
Abbreviation	Meaning
L	Charging
C	Overload
G	Overheat
O	Waiting following STANDBY
N	90 sec. of autonomous time remaining
S	Service
AP	AVR - increasing voltage
AO	AVR - decreasing voltage

e.g. i:S

Alarms	
Abbreviation	Meaning
ZW	Short circuit
PC	Overload
PG	Overheat
AU	Damaged battery
EPO	EPO
BW	Internal error

e.g. a:PC

Screen view:



Main menu



The main menu comprises three screens. Switching between screens is effected by means of the ▼▲ keys. A selection is confirmed by pressing the ↵ key, whereafter a submenu may be selected in the chosen menu also by means of the ▼▲ keys. The arrow on the left of the submenu name indicates the current position. Selections are confirmed by the ↵ key. To proceed to a higher level, press the **ESC** key.



MEASUREMENTS submenu

The MEASUREMENTS submenu is divided into four topical groups: INPUT, OUTPUT, BATTERY, TEMPERATURE.

INPUT 1/4

Description: Power supply unit input parameters

Type: read

Parameters

- U** – input voltage of the power supply unit
- I** – input current of the power supply unit
- f** – input frequency of the power supply unit
- PF** – input coefficient of the power supply unit
- P** – input active power of the power supply unit
- S** – input apparent power of the power supply unit

Screen view:



OUTPUT 2/4

Description: Power supply unit output parameters

Type: read

Parameters

- U** – output voltage of the power supply unit
- I** – output current of the power supply unit
- f** – output frequency
- PF** – output power coefficient
- P** – output active power
- S** – output apparent power

Screen view:



BATTERY 3/4

Description: Battery-related parameters

Type: read

Parameters

- U** – battery section voltage
- I** – absolute battery current value
- Q** – charge level of batteries
(calculated for the current load)
- Tau** – anticipated autonomous time
- StanAku.** – indicates the degree of wear of the batteries; this value is updated following the complete discharge of the batteries if the TestAku parameter is switched on; 100% (default value) means that the batteries are fully efficient

Screen view:



TEMPERATURE 4/4

Description: Temperature parameters

The temperature of unit's internal elements.

Type: read

Parameters

- T0** – temperature of internal elements of the unit
- T1** – temperature of internal elements of the unit

Screen view:



CONTROL submenu

The CONTROL submenu is divided into three groups. The menu can be navigated in the same way as described above. The user may alter the configuration of the power supply unit only if individual items can be changed under specific conditions. Cf. table hereunder.

Table. 4 Table of control flag changes

Operation mode \ Control flag	UNKNOWN	INIT	NORMAL (MAINS)	BACKUP	STOP	READINESS	STANDBY	EMERGENCY
AwaryjneWylaczenie	X	●	●	●	●	●	●	X
UPS	X	X	○	○	●	■	○	X
Buzzer	X	□	□	□	□	□	□	□
Czas.Wyl.EPO	X	□	□	□	□	□	□	□
UPS->STB/STB->UPS	X	X	X	●	X	X	X	X
KasujAwarie	X	X	X	X	X	X	X	●
TestAku	X	□	□	□	□	□	□	□

X – change not allowed
 ● – only switch on
 ○ – only switch off
 □ – switching
 ■ – only switch on; switch off possible only when waiting for a minimal load

Screens are selected using the ▲▼ keys, and confirmation given by pressing ↵. As in the case of parameters, selections are made using the ▲▼ keys and confirmation given by pressing the ↵ key. Two types of parameters have been included in the CONTROL submenu. Some of them require repeated confirmation of an intended change (by pressing ↵) or resignation without changing (pressing the **ESC** key), e.g. **AwaryjneWylaczenie**. The modification of others consists in the appropriate placement of a flag by selecting On or Off by means of the ▲▼ keys and confirmation by pressing ↵. Confirmation is followed by automatic passage to a screen one level higher in the tree structure.

Once confirmed, a parameter is save in the unit's memory. The saving process itself is signalled by the following messages:

-- Trwa zapis -- - saving in progress
 -- Zapis OK -- - saving successfully completed
 -- Bład zapisu -- - saving was unsuccessful, please try again
 -- Zła wartość -- - a value outside the permitted range

The message appear briefly in the lower line of the screen, whereafter the system automatically proceeds to a screen one level higher. This principle is used for all modifiable parameters. An example of saving screens has been given hereunder.



CONTROL 1/3

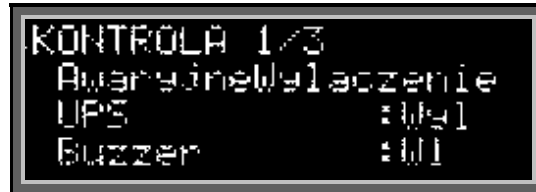
Description: Settings of power supply unit control flags.

Type: read/save

Parameters

- | | |
|---------------------------|---|
| AwaryjneWylaczenie | – forced passage of the power supply unit to the EPO mode from the user interface level |
| UPS | – switching the power supply unit on/off |
| Buzzer | – switching on/off of battery charge status signalling for the BACKUP mode |

Screen view:



CONTROL 2/4

Description: Settings of power supply unit control flags.

Type: read/save

Parameters

- | | |
|---------------------|--|
| Czas.Wyl.EPO | – temporary deactivation (1 min.) of the EPO link. |
| UPS->STB | – manual forcing of the STANDBY mode; switching after a specified time (CONFIGURATION 2/4; Opoz.STB) |
| KasujAwarie | – deletion of EMERGENCY mode flags |

Screen view:



CONTROL 3/3

Description: Settings of power supply unit control flags.

Type: read/save

Parameters

- | | |
|-----------------|---|
| Test Aku | – permission to update the battery status indicator following the complete discharge of batteries |
|-----------------|---|

Screen view:



CONFIGURATION submenu

The CONFIGURATION submenu is divided into four groups. The menu can be navigated in the same way as described above. The user may change the power supply unit parameter values if the keypad is not locked.

Screens are selected using the ▲▼ keys, and confirmation given by pressing ↵. As in the case of parameters, selections are made using the ▲▼ keys and confirmation given by pressing the ↵ key. The CONFIGURATION submenu contains numerical parameters. Their modification consists in increasing or decreasing values by means of the ▲▼ keys, and confirming by pressing ↵. Confirmation is followed by automatic passage to a screen one level higher in the tree structure. To resign from modifying a parameter, press the **ESC** key.

CONFIGURATION 1/4

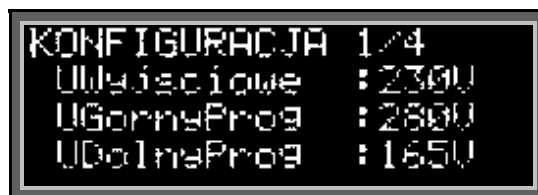
Description: Power supply unit parameters

Type: read/save

Parameters

- UWyjsciowe** – output voltage of the power supply unit
- UGornyProg** – upper limit of the voltage correctness criterion for the supply line
- UDolnyProg** – lower limit of the voltage correctness criterion for the supply line

Screen view:



CONFIGURATION 2/4

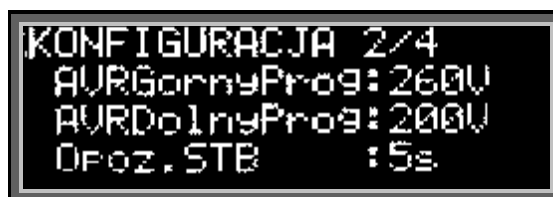
Description: Power supply unit parameters

Type: read/save

Parameters

- AVRGornyProg** – upper input voltage limit, at which the AVR system (decreasing) is activated
- AVRDolnyProg** – lower input voltage limit, at which the AVR system (increasing) is activated
- Opoz.STB** – delay time when switching to STANDBY mode forced by the user

Screen view:



CONFIGURATION 3/4

Description: Power supply unit parameters

Type: read/save

Parameters

Poj. z STB.

– minimal charge level that the batteries must attain in order for the power supply unit to start up following a discharge

ProgKas.Prz.

– load level at which the power supply unit ceases to signal an overload

Screen view:



CONFIGURATION 4/4

Description: Power supply unit parameters

Type: read/save

Parameters

Poj.Aku.

– the capacity of batteries used

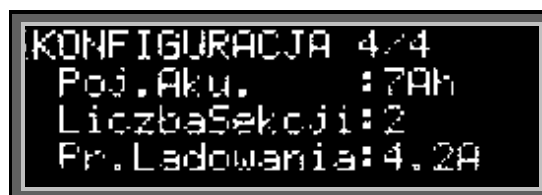
LiczbaSekcji

– number of battery sections (the sum of internal and external battery sections)

Pr.Ladowania

– sum total of battery charging current

Screen view:



ALARMS submenu

The ALARMS submenu comprises two screens. The menu can be navigated in the same way as described above. Screens are selected using the ▲▼ keys, and confirmation given by pressing ↵. Alarm screens inform about the type of alarm which caused the power supply unit to switch to EMERGENCY mode.

ALARMS 1/2

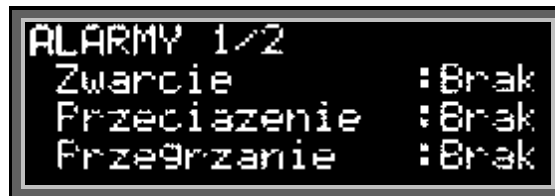
Description: Power supply unit alarms.

Type: read

Parameters

Zwarcie	– short-circuit on the output of the power supply unit
Przeciążenie	– excessive load connected to the output of the power supply unit
Przegrzanie	– excessive temperature of the internal elements of the power supply unit

Screen view:



ALARMS 2/2

Description: Power supply unit alarms.

Type: read

Parameters

AkuUszkodzony	– damaged battery
EPO	– signalling of the forced switch of the power supply unit to the EMERGENCY (EPO) mode
BładWewnetrzny	– internal device error, necessary to contact the service shop

Screen view:



STATISTICS submenu

The STATISTICS submenu comprises four screens. The menu can be navigated in the same way as described above. Screens are selected using the ▲▼ keys, and confirmation given by pressing ↵. The screens display information concerning the operational history of the power supply unit.

STATISTICS 1/4

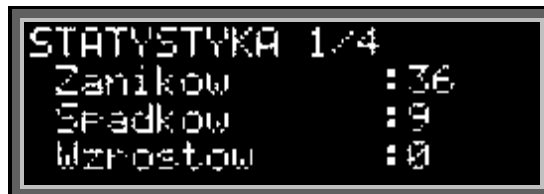
Description: Statistical data.

Type: read

Parameters

Zanikow	– the number of occurrences of events connected with an input voltage decay
Spadkow	– the number of events connected with a fall in voltage to a value below the declared lower input voltage
Wzrostow	– the number of events connected with a rise in voltage to a value above the declared upper input voltage limit

Screen view:



STATISTICS 2/4

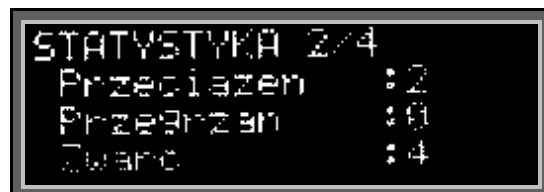
Description: Statistical data.

Type: read

Parameters

Przeciążeń	– the number of events connected with an overload of the power supply unit
Przegrzan	– the number of events connected with an overheat of the power supply unit
Zwarc	– the number of events connected with a short circuit of the power supply unit's output

Screen view:



STATISTICS 3/4

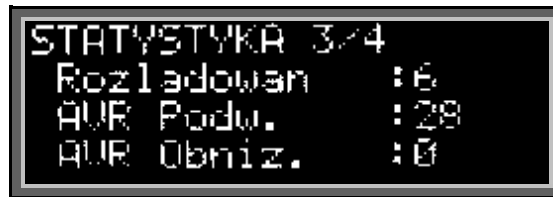
Description: Statistical data.

Type: read

Parameters

- Rozładowan** – the number of total discharges of the power supply unit's batteries
- AVR Podw.** – the number of activations of the AVR system resulting in an increase in voltage value
- AVR Obniż.** – the number of activations of the AVR system resulting in a decrease in voltage value

Screen view:



STATISTICS 4/4

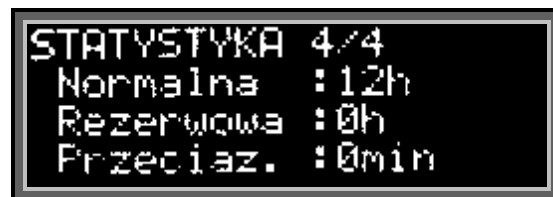
Description: Statistical data.

Type: read

Parameters

- Normalna** – operating time of the power supply unit in NORMAL mode
- Rezerwowa** – operating time of the power supply unit in BACKUP mode
- Przeciąż.** – operating time of the power supply unit in an overload state

Screen view:



PANEL SETTINGS submenu

The PANEL SETTINGS submenu contains a single screen. The menu can be navigated in the same way as described above. The user can change the values of power supply unit parameters.

Confirm a screen by pressing **↵**, select a parameter by means of the **▲▼** keys and confirm by pressing the **↵** key. The PANEL SETTINGS menu contains numerical parameters. Their modification consists in increasing or decreasing values by means of the **▲▼** keys, and confirming by pressing **↵**. Confirmation is followed by automatic passage to a screen one level higher in the tree structure. To resign from modifying a parameter, press the **ESC** key.

PANEL SETTINGS

Description: Settings of user interface parameters.

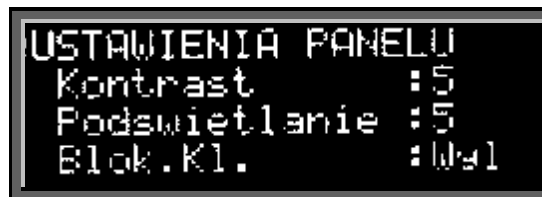
Type: read/save

Parameters: **Kontrast** – level of contrast of the LCD

Podswietlanie – level of backlight brightness of the display

Blok.Kl. – indicates that the keypad is locked; can be changed only from the level of the control programme; when the keypad is locked, parameters cannot be changed

Screen view:



IDENTIFICATION submenu

The IDENTIFICATION submenu contains a single screen with information concerning the device. To exit this screen, press the **ESC** key.

IDENTIFICATION

Description: Information about the device.

Type: read/save

Parameters: **S** – nominal output apparent power of the power supply unit

P – nominal output active power of the power supply unit

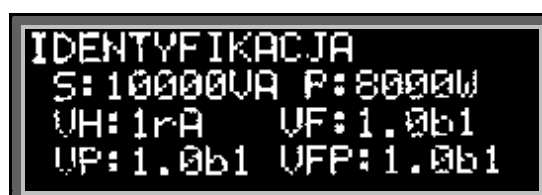
VH – hardware version

VF – firmware version

VP – communication protocol version

VFP – LCD panel firmware version

Screen view:



INDUSTRIAL WORK SAFETY INSTRUCTIONS

TRANSPORT

- exercise particular care when transporting;
- because of its weight, the device has been fitted with rubber wheels;
- the appliance should be operated and stored in conditions concordant with those set forward in the specification;

ELECTRICAL SAFETY

- it is forbidden to work on one's own under conditions constituting a threat to life and/or health;
- during a momentary short-circuit, the high current may cause serious burns;
- before connecting the appliance, it is necessary to check the technical condition of cables, plugs and sockets, as well as that of the appliance itself;
- insofar as possible, you should connect and disconnect communication cables using one hand only, for in the event of touching two surfaces with different electric potentials you may suffer an electric shock;
- the device must be connected to a three-cable system (1P+N+PE) – failure to do so will result in an increased risk of electric shock;

It is strictly forbidden for the user to perform any repair work, as this would constitute a threat to health and/or life. All repairs and battery replacements must be carried out exclusively by qualified service personnel.



NOTE! The UPS is completely disconnected from the power network only when the power supply cord is disconnected.



NOTE! The device is equipped with an internal power source (storage cells), and therefore a dangerous voltage may appear on the output even if it is not connected to the mains.



NOTE! SINLINE PRO 10000 power supply units are not intended for usage with medical life and/or health support systems.

INSTALLATION



NOTE! Before installing the appliance, you must acquaint yourself with the principles of industrial work safety set forward in the previous chapter.

UNPACKING

Carry out a visual inspection of the power supply unit immediately upon delivery. Although the product is packaged, the appliance could have undergone damage due to inappropriate transport conditions. If any damage is determined, inform the carrier or seller.



NOTE! The device may be delivered with connected batteries

The appliance is placed on a wooden pallet, which may be moved using a fork-lift truck. In order to unpack the device, you should first cut through the bands attaching it to the pallet. Next lift off the cardboard boxes. Remove the protective corners.



NOTE! The appliance does not stand directly on the pallet, but on a layer of polyethylene foam, which impairs its stability. Falling of the appliance may constitute a threat to health or life.

If the appliance is delivered with batteries, please note that it is very heavy – cf. the table of technical parameters. Use belts and a hoist to remove the appliance from the pallet.

If the device is delivered without batteries installed, it should be removed from the pallet by at least 3 people.

Please check the contents of the package. The package should contain the following:

- power supply unit,
- PowerSoft Personal software on a CD disk,
- RS232 communication cable for connecting the power supply unit to a PC,
- USB communication cable for connecting the power supply unit to a PC,
- set of fusible cut-outs type 10x38 (2 pieces)
- instruction manual,
- installation guidelines,
- guarantee card,
- mounting holders (2 pieces)

INSTALLATION OF THE POWER SUPPLY UNIT

The weight of the device should be considered when selecting the point of installation. The unit should be used only in rooms where the levels of dustiness, temperature and humidity are concordant with the device specifications. Appropriate cooling conditions must be ensured for the unit to work correctly. For this reason, the unit's ventilation openings must be uncovered at all times, while the distance between the unit and other objects should not be less than 30 cm.



NOTE! It is forbidden to install the appliance in the vicinity of flammable materials!

Detailed information has been given in a separate document containing installation guidelines, provided with the product.

Before placing the power supply unit, you should install the two additional mounting holders, which improve its stability and allow it to be screwed to the floor, if necessary. To do this, loosen the 4 M8 screws located in the central bottom part of the appliance. Tip the device slightly and slide in the holders. Next, screw the holders to the device using the 4 M8 screws.

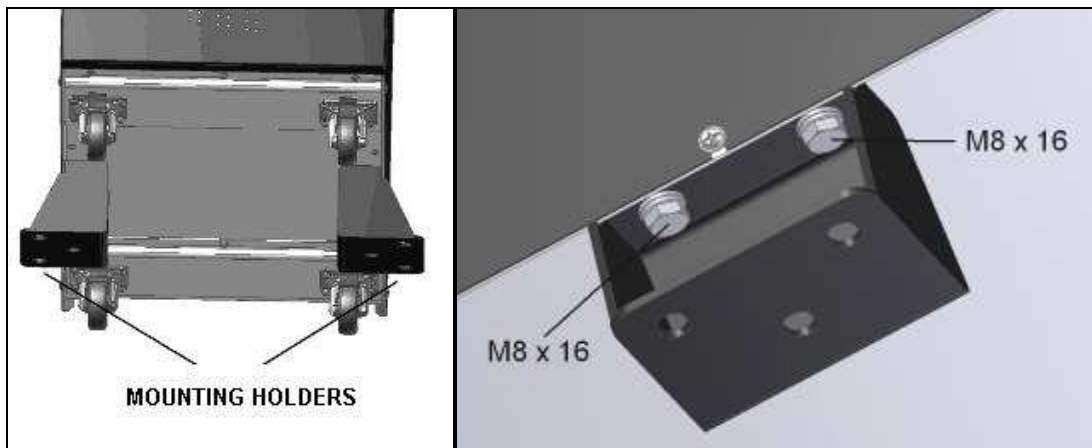


Figure 2: Mounting holders

BATTERY MODULE

Additional battery modules can be connected to the SINLINE PRO 10000 series power supply units. The modules are attached to the connection terminals on the rear panel of the unit. Adding additional battery packs extends the time of battery mode operation. The battery modules are connected in a row, and are protected by additional fuses located in their rear panels.



NOTE! In the event of a burnt out, the fusible cut-outs should be replaced with new ones that are fully concordant with the specification.

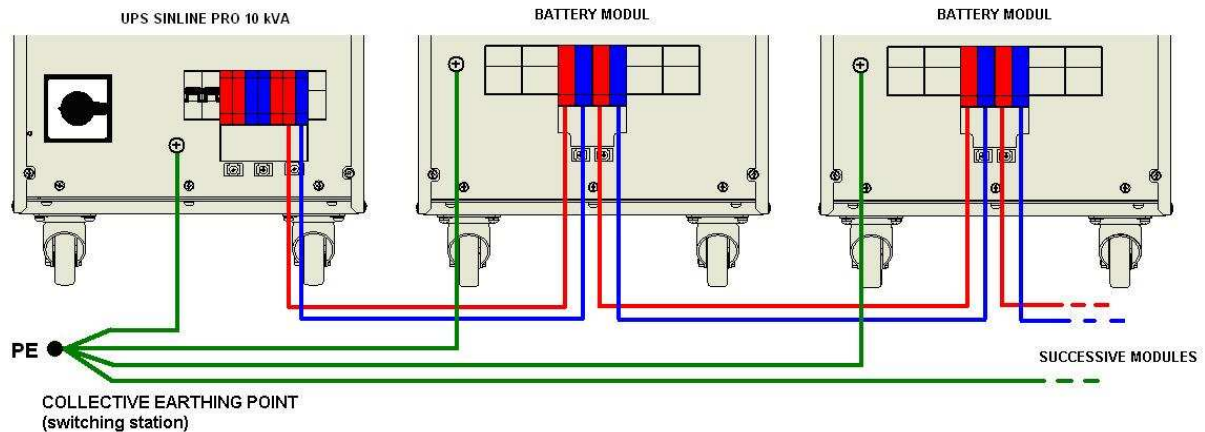


Figure 3: Connecting battery modules

Connecting modules



Note! When the safeguards are active, the voltage on the connection terminals is dangerous to health and/or life. All safeguards must be switched off before carrying out any installation work!

1. Switch off the power supply unit by means of the user interface (CONTROL 1/3; UPS).
2. Set fuses F3 and F4 to OFF.
3. Disconnect all battery safeguards (F1, F2 and F5) by opening the fusible cut-out mounts. No specific order has to be observed. Remove the fuse-elements.
4. Disconnect all battery safeguards for already connected and newly connected battery modules – to do this, open the fusible cut-out mounts and remove the fuse-elements.
5. Disconnect the safeguards of the main line and the BYPASS in the room/building switchboard.
6. Screw out the protective plugs of connecting elements (rear panel of the power supply unit and modules).
7. Connect the module to the power supply unit, making sure to maintain the correct polarity. The modules are connected in a row, i.e. connections are made between the power supply unit and the first module, then between the first and second modules, between the second and third modules, etc. The protective earthing cables from each appliance are routed to a common point in the switching station of the building.
8. Having checked the correctness of connections, secure the connecting elements using the plugs. The cables should be secured against tearing out – to this end, fix them with bands to the special grips located beneath the connectors.
9. Activate the safeguards in the switching station of the room/building.

10. Replace the fuse-elements in their respective mounts.
11. Close the fusible cut-out mounts of all connected battery modules in turn.
12. Close the F1 mount in the power supply unit.
13. Wait at least 10 sec.
14. Close the F2 mount in the power supply unit – the batteries are connected.
15. Switch fuses F3 and F4 ON.
16. Set the appropriate battery-related parameters of the power supply unit (CONFIGURATION 4/4).
17. Switch off the power supply unit by means of the user interface (CONTROL 1/3; UPS).

Display data that directly concerns the number of connected batteries will be automatically updated once the batteries are topped up. Until this happens, the information given may be inaccurate.

Disconnecting modules

1. Switch off the power supply unit by means of the user interface (CONTROL 1/3; UPS).
2. Set fuses F3 and F4 in the power supply unit OFF.
3. Disconnect the safeguards of the main line and the BYPASS in the room/building switching station.
4. Disconnect safeguards F1, F2 and F5 in the power supply unit and F1 and F2 all battery modules – to do this, open the fusible cut-out mounts and remove the fuse-elements.
5. Remove the plugs of connecting elements.
6. Disconnect the modules. The connecting cables must be fully disconnected.
7. Secure the connecting elements by screwing in the protective plug.
8. Activate the safeguards in the switching station of the room/building.
9. Replace the fuse-elements in their respective mounts.
10. Close the fusible cut-out mounts of all connected battery modules in turn (if any are still connected).
11. Close the F1 mount in the power supply unit.
12. Wait at least 10 sec.
13. Close the F2 mount in the power supply unit – the batteries are connected.
14. Switch fuses F3 and F4 ON.
15. Set the appropriate battery-related parameters of the power supply unit (CONFIGURATION 4/4).



NOTE! It is forbidden to leave loose cable ends. They could be under a voltage that is dangerous to health and/or life.

CONNECTING THE POWER SUPPLY UNIT

Connecting elements

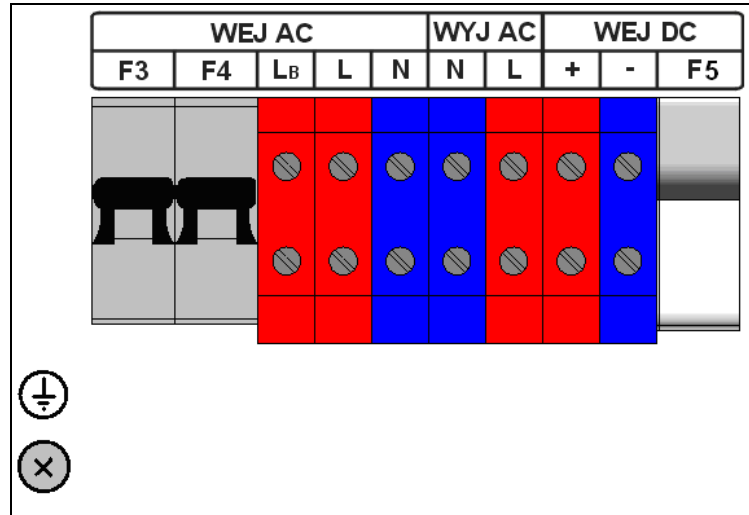


Figure 4: Connecting elements with safeguards

F3 – safeguard of the service BYPASS line

F4 – primary line protection

WEJ AC – input terminals

L_B – service BYPASS phase line

L – primary phase line

N – primary neutral line

WYJ AC – output terminals

L – output phase line

N – output neutral line

WEJ DC – input terminals of the external battery module

+

– positive pole

-

– negative pole

F5 – safeguards of the terminal of the external battery module (fusible cut-out)



- appliance protective earthing point, connection of a cable with an eyehole connector by means of an M6 screw

The power supply unit is not provided with connection wires with sockets. Thus, it is connected by screwing the ends of individual cables to the links. Next, the cables should be protected against tearing out - to do this, fasten them with bands to the special grips located beneath the connecting elements.

Cable diameters sizes should be concordant with the installation guidelines. The cables should terminate in metal sleeves.

The system must be structured in such a way as to make possible the disconnection of the power supply unit from the mains, e.g. by the switching of integrated overcurrent cut-outs.

	NOTE! The UPS should be connected by qualified and authorised personnel only.
---	--

	NOTE! The UPS is completely disconnected from the power network only when the power supply cord is disconnected.
---	---

It is recommended that protection circuits of the building's electric system be used as one of the protection levels. The parameters of the building's electric system protection circuits should be selected in accordance with the type and magnitude of the load connected to the system. In extreme cases, different characteristics of the building's and power supply unit's protection systems may cause the former to be activated more rapidly.

	NOTE! The user is obligated to place the following information on all mains cut-outs installed far from the point of placement of the power supply unit:
	"BEFORE COMMENCING WORK ON THIS CIRCUIT, YOU MUST: - DISCONNECT THE UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEM - CHECK FOR ANY VOLTAGE BETWEEN ANY OF THE TERMINALS (INCLUDING THE PE TERMINAL) RISK OF REVERSE POWER SUPPLY"

Electrical system

The electrical system should be structured in accordance with the installation guidelines elaborated for the power supply unit. The guidelines constitute a separate document attached to the product.

START-UP

	NOTE! If no battery module is connected to the power supply unit, the F5 module fuse should not be installed (installation of the fuse would lead to the appearance of a dangerous constant voltage on the connecting strip of the battery module).
---	--

Once it has been correctly connected, start up the power supply unit by performing the following activities in the order mentioned:

- 1) Check whether fuses F3 and F4 are OFF; if not, set them OFF.
- 2) Open the mounts of fusible cut-outs F1 and F2.
- 3) Insert an appropriate fuse-element in mount F1 (do not close the mount).
- 4) Insert an appropriate fuse-element in mount F5, and then close it in order to close the circuit.
- 5) mount of the battery module's fusible cut-out and close the circuit by closing the mount.
- 6) Close mount F1.
- 7) Wait at least 10 sec.
- 8) Close mount F2 – the batteries are connected.
- 9) Switch fuses F3 and F4 ON.
- 10) Set the configuration of the power supply unit (when starting up for the first time, if modifications are required).
- 11) Switch on the power supply unit by means of the user interface (CONTROL 1/3; UPS).

Points 4 and 5 should be performed only if an additional battery module is connected. Once these actions are performed, the power supply unit will commence normal operation.



NOTE! The batteries of the power supply unit attain full power after approx. one month of operation in NORMAL mode.

SWITCHING OFF AND DISCONNECTING THE POWER SUPPLY UNIT

In order to completely disconnect the power supply unit, perform the following activities in the order mentioned:

- 1) Switch the power supply unit off by means of the user interface (CONTROL 1/3;UPS) – logical switch-off;
- 2) Disconnect the safeguards of the main line and the BYPASS in the room/building switching station in order to safely uninstall the power supply unit.
- 3) Set safeguards F3 and F4 in the power supply unit OFF.
- 4) Disconnect safeguards F1, F2 and F5 - to this end, open them and remove the fuse-elements.
- 5) If battery modules are connected to the power supply unit, repeat point 4 for safeguards F1 and F2 w in these modules.
- 6) Remove the protective plugs of connecting elements on the power supply unit and on modules (if any).
- 7) Disconnect the connecting cables from the switching stations, power supply unit and modules (also between modules). It is strictly forbidden to leave any loose wires.
- 8) Reinstall the protective plugs.
- 9) Close the mounts of fusible cut-outs F1, F2 and F5 in the power supply unit and of F1 and F2 in the modules, if the fuse-elements have been removed. The fuse-elements should not be stored in the power supply unit if it is not installed.

OPERATING MODES OF THE POWER SUPPLY UNIT

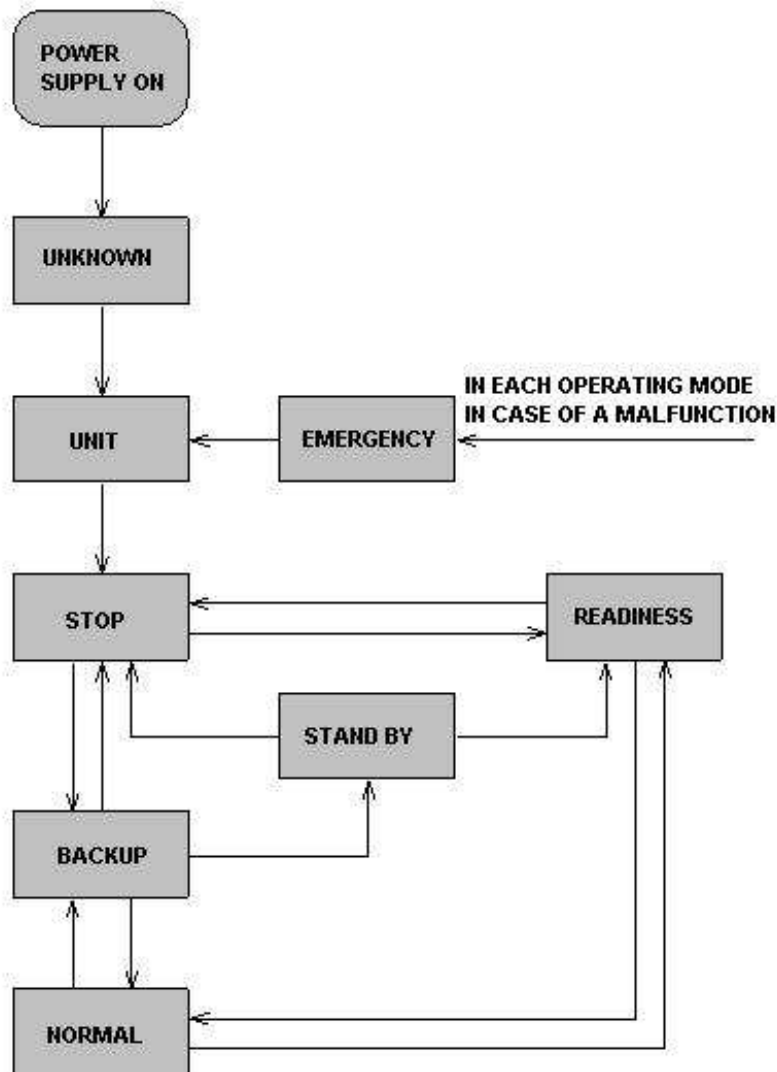


Figure 5: Graph presenting the operation modes of the power supply unit

UNKNOWN mode

An intermediate state that occurs when the power supply unit is started up following energisation.

INIT (INITIALISATION) mode

An intermediate state that occurs following initiation of the hardware platform by means of start-up values or during a return from EMERGENCY mode.

NORMAL mode (MAINS OPERATION)

In for the power supply unit to be in NORMAL mode, it must be logically switched on (from the user interface). In addition, the input primary power line must satisfy the mains correctness criteria (correct value of voltage and frequency). The unit then supplies power to the outputs from the abovementioned line, with the AVR system making the necessary corrections. In this mode, the batteries are topped up.

BACKUP mode (BATTERY OPERATION)

If the primary power line does not satisfy the mains correctness criteria, the power supply unit switches to the BACKUP mode (battery operation mode). In BACKUP mode, the inverter supplies power to the battery outputs.

STOP mode

The power supply unit is logically switched off (from the user interface), and no voltage satisfying the correctness criteria is present on the primary line. This is also an intermediate state when the power supply unit switches from EMERGENCY mode.

READINESS mode

The power supply unit is logically switched off (from the user interface), while the primary line satisfies mains correctness criteria. Storage cell preservation mechanisms are active. Once the power supply unit switches from STANDBY mode to READINESS mode, the battery charge level is checked. If the level is below the set threshold (CONFIGURATION 3/4; Poj. z STB.), the unit remains in this state until the required minimum is reached. The appropriate message is displayed on the panel (i:O).

STANDBY mode (WAITING)

Passage to STANDBY mode may be effected solely from the BACKUP mode in the event of battery discharge, or forced from the user interface (CONTROL 2/3; UPS->STB). Switching occurs after a preconfigured time (CONFIGURATION 2/4; Opoz.STB).

The unit remains in this mode if no voltage satisfying mains correctness criteria is present on the primary line and the power supply unit is logically switched off.

The logical switching off of the unit causes it to switch to STOP or READINESS mode.

EMERGENCY mode

Switching to the EMERGENCY mode may be caused by an overload, excess temperature, short-circuit, an internal error, or EPO activation. The power supply unit is logically switched off, and the processing blocks are inactive.

OTHER FUNCTIONAL ELEMENTS

PROTECTION

Overload protection

An overload state (above 105%) is indicated by a continuous sound signal and the corresponding message on the display.

If in BACKUP mode operation the load is maintained at a level of 105÷120%, the power supply unit will remain in the current operation mode for 10 seconds, and thereafter switch to the EMERGENCY mode. If the overload exceeds 120% of the rated power of the unit, the device immediately switches to EMERGENCY mode. The power supply unit remains in this mode until the manual intervention of the user. Overload signalling will be switched off and the unit will switch to BACKUP operation mode (overload within 105-120%, and the unit has not yet switched to EMERGENCY

mode) only when the overload falls below the set level (CONFIGURATION 3/4;ProgKas.Prz.).

If in NORMAL operation mode the overload rises to 105%, the unit will start signalling this development by a continuous sound and the appropriate message on the display. As in the case of BACKUP mode, this state will last until the overload falls below the set level (CONFIGURATION 3/4;ProgKas.Prz.). In NORMAL mode there is no time limit (as opposed to the BACKUP mode). In NORMAL mode, the parameters of power line fusible cut-out F4 function as the upper overload limit.

Short circuit protection

In BACKUP mode there is an electronic short-circuit protection which, when a short-circuit occurs, limits the short-circuit current to a safe level. The occurrence of a short-circuit is indicated by the corresponding message and a rapid, intermittent sound signal. If the short-circuit lasts in excess of 100 ms, the power supply unit switches to EMERGENCY mode.

The input power lines (primary line and service bypass line) are protected by automatic fuses (fuses with designations F3 and F4).

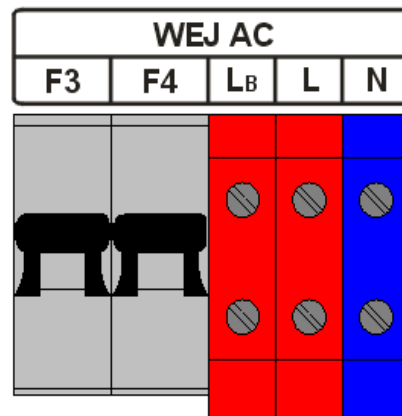


Figure 6: Input connectors with fuses

Surge protection

The power supply unit is fitted with surge protection at the input, which protects the circuits of receivers and the internal circuitry of the unit against overvoltage caused by atmospheric phenomena and interference in the power grid.

Battery protection

Batteries are protected with fusible cut-outs. The terminal of the external battery module and the internal batteries are protected separately. This safeguards also function as disconnectors, which are used - for example - during installation, transport or storage. The fuse type is specified in the technical parameters table.



NOTE! It is prohibited to use fuses other than set forward in the device specification.

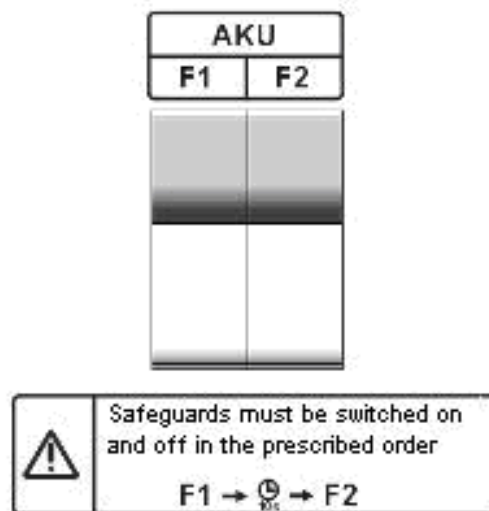


Figure 7: Internal battery protection

It is necessary to observe the instruction written in the frame below the fuses, namely that the fuses must be activated in the appropriate order. F1 should be activated first, and F2 10 sec. later. Failure to follow this instruction may damage the power supply unit.

Fusible cut-out F5 protects the terminal of the external battery module and is located to the right of the terminals. It disconnects both poles when the mount is open.

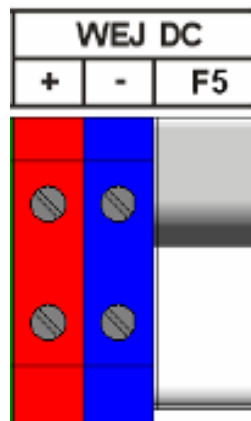


Figure 8: External battery module connectors with a fuse

Thermal protection

The unit is equipped with thermal protection against overheating. There are two protection levels.

If the internal temperature reaches a value close to critical, a sound signal is activated, and a message appears on the display. The UPS remains in the current mode. If the temperature continues to grow, then once the critical temperature is reached, an alarm message is displayed and the power supply unit switches to EMERGENCY mode.

AVR

The power supply unit is equipped with an AVR (Automatic Voltage Regulation) system that immediately corrects small drops (AVR - increasing) and rises in mains voltage, so as to ensure that receivers enjoy the proper supply conditions without using up the power gathered in batteries.

EPO

The EPO (Emergency Power Off) is a mechanism that cuts off the energy supply to receivers at the unit's output in extreme situations (e.g. a fire). The UPS then switches to EMERGENCY mode.

The mechanism can be activated in two ways:

- by opening contacts of the external EPO connector (trigger)
- forced from the user interface (CONTROL 1/3; AwaryjneWylaczenie)

Reactivation of the output voltage takes place only when the user manually deletes the failure flag (CONTROL 2/3; KasujAwarie) and sets the trigger to inactive (normal trigger status) in the case of external triggering.

It is possible to temporarily lock the EPO function for the duration of EPO trigger installation. The installer can then safely remove the EPO connector without any risk of disconnecting the power supply of receivers. The operation may continue for at maximum 1 minute from the moment of setting of the control flag (CONTROL 2/3, Czas.Wyl.EPO). Thereafter, the lock is turned off automatically.

The EPO connector pins have a safe voltage that is separated from the remaining device systems.



NOTE! The EPO circuit must be a separate circuit and it is prohibited to connect it with other systems.

Service BYPASS

The power supply unit is equipped with a service BYPASS line switch, which enables direct switching of the BYPASS line to the unit's output terminals bypassing the unit's blocks.



Figure 8: Manual BYPASS line switch

Switch in the UPS position – normal operation of the power supply unit.
Switch in the BYPASS position – the BYPASS line is switched to the input terminals.
Switching may be performed at any time.

COOPERATION OF THE POWER SUPPLY UNIT WITH A PC

RS232 AND USB COMMUNICATION

The user can modify the parameters of the power supply unit not only from the user interface (panel), but also by means of the dedicated PowerSoft software. Please note, however, that this software does not enable changing all of the configuration parameters available from the device's panel.

SINLINE PRO 10000 series power supply units have been provided with advanced management options. The user has at his disposal two RS232 and USB communication links and the PowerSoft Personal programme, which is delivered with unit. To maintain the desired cooperation, it is necessary to connect the unit to a free computer port by means of the attached cable. Once the cable is connected, you should turn on the power supply unit, switch on the computer and install the software proceeding in accordance with the attached instruction or the installation wizard prompts (for Microsoft Windows).



NOTE! Only one link may be used at any one time.

The RS232 and USB ports are separated galvanically from the remaining blocks of the unit.

EVER SNMP/HTTP NETWORK MANAGEMENT CARD

The EVER management card is optional and may be installed by the user. It serves to integrate the power supply unit with an Ethernet-based computer network. The network card is located in a special slot on the rear wall of the unit. The card allows the user to manage the unit from any computer in the network. This solution is most frequently used in the event of centralised power supply, or if it is necessary to manage the power supply system remotely.

The network card has the following services implemented:

- SNMP agent – the power supply system may be managed by means of "SNMP Manager" software;
- HTTP server – possibility of viewing and modifying power supply unit parameters using an internet browser;
- Telnet server – management by means through a Telnet network terminal;

More information about the network card may be found in its instruction manual.



NOTE! If the SNMP card is connected, communication through the RS232 and USB links is disabled, while the PowerSoft Personal programme is unavailable.

Installing a management card

- 1) Switch on the power supply unit by means of the user interface (CONTROL 1/3; UPS).
- 2) Set safeguards F3 and F4 OFF.
- 3) Switch off safeguards F1, F2 and F5 by opening the fusible cut-out mounts. The safeguards do not have to be switched off in any special order.
- 4) Wait for approx. 30 sec. in order to discharge the internal capacities of the unit.
- 5) Unscrew the metal grille from the card socket.
- 6) Connect the card cable (the cable is located in the card slot).
- 7) Insert the card into the slot.
- 8) Screw the card grille to the rear panel.
- 9) Activate safeguard F1 by closing the mount.
- 10) Wait at least 10 sec.
- 11) Activate safeguard F2 by closing the mount.
- 12) Activate safeguard F5 by closing the mount.
- 13) Set safeguards F3 and F4 ON.
- 14) Switch on the power supply unit by means of the user interface (CONTROL 1/3; UPS).

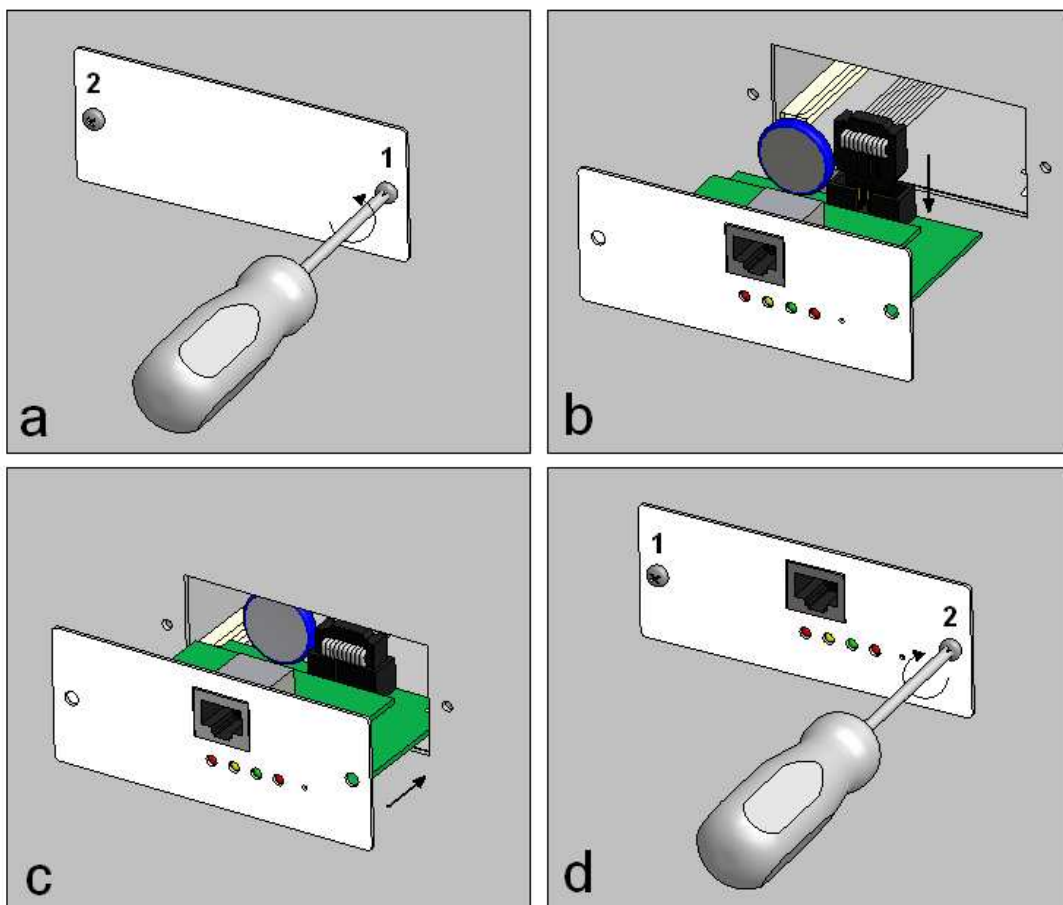


Figure 5: Installation of the card

INSTALLING AND CONFIGURING POWERSOFT PERSONAL

Installing on a Windows system

Before installing the PowerSoft software, you should:

- uninstall your current version of PowerSoft and other monitoring software (if the user is replacing an emergency power supply unit that protects his PC),
- if you are installing a power supply unit that communicates with the PC by means of a USB connection, the USB cable should be disconnected from the PC. The installation wizard will inform you of the necessity of connecting the communication cable.

In order to install PowerSoft on a Windows system (the list of operating systems on which the application has been successfully tested may be found on www.ever.com.pl), just activate the programme and perform the steps prompted. During installation, you should select the model of the power supply unit that is connected to the PC on which the software will be installed. This setting can also be modified when the application is active.

In the case of a power supply unit that communicates with the computer over a USB link, when the installation of PowerSoft Personal is completed, the installer will ask you to connect the USB cable to the PC. The operating system will inform that new hardware has been found and propose the installation of a driver. Select the option to install a driver from a specific location on the first screen, and on the next screen indicate the PowerSoft installation catalogue (usually *C:\Program Files\PowerSoft*) to be searched. In the next step, the operating system will automatically find and install the appropriate driver.

In the case of Windows Vista, the operating system will not automatically initiate driver installation from the disk. Once the USB cable is connected to the computer, open the control panel from the start menu and select system properties. In the list of equipment find the USB bus branch (usually, it is an open branch) and select the emergency power supply unit. Through device properties (accessed by right-clicking the icon with your mouse) update the device driver, proceeding in accordance with the screen prompts. As the driver location, select the PowerSoft installation catalogue (typically *C:\Program Files\PowerSoft*).

In order to uninstall the PowerSoft software, just select the PowerSoft – Uninstall icon under the appropriate item in the Start menu. You can also uninstall the programme from the "Add/remove programmes" application in the control panel.

Installing on a Linux/Unix system

The binary version of the application for Linux/Unix systems is delivered in the following forms:

CentOS, RedHat, Suse Linux, Fedora Core

For CentOS, RedHat, Suse Linux and Fedora Core, the software is delivered in the form of an RPM package. You can install the software using any package manager in the installed system. If you are using a command line, the software will be installed once you type in the following command:

```
rpm -ivh powersoftpersonal-x.x.x.i386.rpm
```

Users working with the software must possess system administrator privileges (root) in order to install and subsequently use the programme. Following installation, the package is located in the catalogue */usr/local/powersoft*.

In order to uninstall the application, write the following command in the command line:

```
rpm -ev powersoftpersonal-x.x.x
```

Debian

For Debian systems, the software is delivered in the form of a DEB package. Installation is performed by means of the following command:

```
dpkg --install powersoftpersonal-x.x.x.deb
```

In order to uninstall the application, write the following command in the command line:

```
dpkg --remove powersoft
```

FreeBSD

For FreeBSD systems, the software is delivered in the form of a default package format intended for FreeBSD systems. Installation is performed by means of the following command:

```
pkg_add powersoftpersonal-x.x.x.tbz
```

In order to uninstall the application, write the following command in the command line:

```
pkg_delete powersoft
```



NOTE! FreeBSD systems do not support power supply unit communication over the USB link.

Starting

Following installation, the system service is started automatically, while the control panel application is located in */usr/local/powersoft*.

Please note that the system location should be Polish, in order to correctly display Polish diacritical marks.

Updating software

Windows systems

The software installer for Windows systems has an integrated automatic software updater. The PowerSoft software can regularly check whether a new version is available, and inform the user thereof. By default, the availability of updates is checked once the user logs on. This setting can be checked through the "Update configuration" item in the system programme menu.

Linux/Unix systems

PowerSoft software for systems from the Linux/Unix family may be updated using a new version of the package, downloaded from www.ever.eu.

In the case of CentOS, RedHat, Suse Linux and Fedora Core systems, updates may be performed by means of the following command:

```
rpm -Uv powersoftlite-x.x.x
```

For Debian and FreeBSD systems, we recommend uninstalling the old version of the software and then installing the new version. Instructions for this procedure can be found in the instruction manual available at www.ever.eu.

COMMENTS REGARDING OPERATION



NOTE! The power supply unit is intended for commercial and industrial applications in a secondary environment. In order to prevent the emission of interferences, it may be necessary to apply additional preventive measures or installation limitations.



NOTE! The power supply unit does not contain any end-user serviceable parts.

- Damage to the guarantee seal is tantamount to voidance of the appliance's guarantee.
- All repairs should be performed solely by qualified service personnel.
- The power supply unit may function unreliably when the powered equipment takes up considerable surge power. In practice this means that although the average power of the powered equipment is within the range approved for the power supply unit, the equipment nevertheless shuts down the unit. This occurs because the powered equipment temporarily takes up power that considerably exceeds the nominal power of the unit, which leads to the detection of an overload and the shutdown of the unit.
- It is recommended that batteries be handled and controlled by competent persons who have been duly trained and observe the required safety measures.
- The batteries should be replaced with products of the same type and the same number of cells or units. All batteries should be replaced simultaneously.



WARNING! Protect the batteries against fire – risk of explosion.



WARNING! Do not open the batteries; protect them against damage. Spilt electrolyte is harmful to the skin and eyes, and may also be toxic.

COOPERATION OF THE POWER SUPPLY UNIT WITH ELECTRICITY GENERATORS

SINLINE PRO 10000 series UPS units are class LINE-INTERACTIVE devices, which synchronise with the voltage of the power grid. By definition, the unit tolerates mains voltage fluctuations and frequency changes within a certain range with reference to a model frequency of 50 Hz (cf. table of technical parameters). In the event of cooperation with an electricity generator, frequency changes will have a value variable over time and are strictly dependent on changes in the load value. If changes in generator voltage frequency exceed the adopted tolerance, the UPS shall consider such a value as incorrect and switch to the appropriate operation mode in accordance with its principles of operation, outlined hereabove.

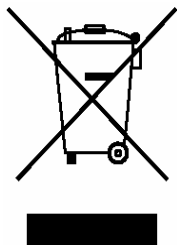
STORAGE, MAINTENANCE AND TRANSPORT

The power supply unit should be stored and transported in accordance with the installation guidelines set forward in a separate document, attached to the device. If these requirements are not satisfied, EVER Sp. z o.o. shall not assume any liability for mechanical damage caused during transport.

RECYCLING

The appropriate recycling of used electric and electronic equipment helps protect human health and the natural environment against the negative effects brought about by the presence of hazardous materials and components, and the improper storage and processing of such equipment.

The Act of 29.07.2005 on Waste Electric and Electronic Equipment, Article 22.1, Point 1.2.



The crossed out waste container symbol means that, in the European Union, a used product should be handed over to a special waste handling outlet. This concerns both the appliance itself, and all accessories marked with this symbol. Such products should not be disposed of together with unsorted municipal waste.

Method of safe removal of batteries from the device:

The batteries should be removed from the appliance by an authorised service outlet or by a duly authorised electrician.

TECHNICAL PARAMETERS

INSTALLATION GUIDELINES

PARAMETER \ POWER SUPPLY UNIT			SINLINE PRO 10000
Apparent/active power			10 kVA 8 kW
POWER SUPPLY PARAMETERS			
Power supply system topology			1P3W
Rated voltage			230 V
Rated current			46 A
Rated frequency input			50 Hz
Minimum cable diameter			10 mm ²
Primary and BYPASS line safeguards	Switch fuse		80 A gG
	Switch fuse		80 A gG
OUTPUT PARAMETERS			
Output system topology			1P3W
Nominal input voltage			230 V
Rated current			44 A
Minimum cable diameter			10 mm ²
Output line safeguards	Switch disconnecter		80 A
ENVIRONMENTAL PARAMETERS			
Quantity of heat released under nominal work conditions			<600 BTU
Operating temperature			10 ÷ 40°C
Storage temperature			0 ÷ 40°C
Humidity			< 95%
Height above sea level			< 1000 m
MECHANICAL PARAMETERS			
Device dimensions (width x depth x height)			340 x 740 x 795 mm
Power supply unit weight			200 kg
Operating distance			front: > 200 mm sides: > 100 mm rear: > 300 mm

TECHNICAL DATA

PARAMETERS	SINLINE PRO 10000
Output power ¹⁾	10 kVA 8 kW
GENERAL DATA	
Topology	VI
Total efficiency for Pmax AC/AC	> 98%
Cooling	Forced, internal fans
Protection level	IP20
Working environment	Separate rooms with a low level of contamination
Working temperature ²⁾	10 ÷ 40°C
Storage temperature	0 ÷ 40°C
Relative humidity during operation	< 95%
Relative humidity during storage	< 95%
Height above sea level ³⁾	< 1000 m
NETWORK POWER MODE	
Input voltage	~150 ÷ 280 V (~165 ÷ 280 V) ± 2%
Input voltage frequency	45 ÷ 55 Hz ± 1 Hz
Output voltage range	~172.5 ÷ 252 V (~190 ÷ 252 V) ± 2%
Switching thresholds: mains-ups	~150 V / ~290 V (~165 V / ~280 V) ± 2%
Output voltage shape	As on the input
Mains voltage filtration	interference filter RFI-EMI, varistor muffler
BATTERY MODE	
Input voltage (effective value)	~230 V ± 2%
Output voltage shape	Sine
Output voltage frequency	Synchronous / 50Hz ± 0.2 Hz
Switching thresholds: ups-mains	~155 V / ~285 V (~170 V / ~275 V) ± 2%
Mains voltage filtration	LC
Output voltage distortion THDu	< 5% for Pmax (linear)
Peak factor CF	02:01
Short-circuit current	> 4 I _N
BATTERIES	
Battery voltage (sum total)	336 V DC
UPS batteries	1 x 28 x VRLA 12 V / 7 Ah 2 x 28 x VRLA 12 V / 7 Ah (option)
Backup time from internal batteries (100% / 80% / 50% Pmax)*	> 7/10/15 min. > 13/17/30 min.
Backup time with 1 battery module (100% / 80% / 50% Pmax) ⁵⁾	> 40/51/92 min
Maximum internal battery charging time ⁴⁾	< 2h
Maximum charging time of 1 module (after discharging with a power of 80% Pmax) ⁴⁾	< 3h
MECHANICAL PARAMETERS	
Dimensions (width x depth x height)	340 x 740 x 795 mm
UPS weight	200 kg
EQUIPMENT	
Terminals	screw terminals; max. 16□ (line)
Input AC safeguards	Overcurrent breakers for the basic line and the BYPASS line 2 x 63 A (ch.B)
DC safeguards (internal batteries)	30 A / 400 V DC, cylindrical 10 x 38 gRB
DC safeguards (external battery module)	30 A / 400 V DC, cylindric 10 x 38 gRB
Input safeguards	electronic
Signalling	sound and LED, LCD display
Communication interface	RS 232, USB, network management card SNMP / HTTP - option
EPO	Included
Service BYPASS switch	Included

Note: The manufacturer reserves the right to modify the above parameters without prior notice.

Notes:

- ¹⁾ For standard operation of the power supply unit, the load applied to the output may not exceed 80% of the value given in the table. The power margin is necessary to ensure the continuous work of connected devices in the event of instantaneous load current fluctuations.
- ²⁾ Prolonged exposure of the power supply unit to an ambient temperature in excess of +25°C will shorten the life of batteries.
- ³⁾ When the height above sea level rises in excess of the specified limit, the permitted load power is reduced.
- ⁴⁾ Charging time to reach 90% of battery capacity, preceded by a discharge with a load equal to 80% Pmax
- ⁵⁾ Example of a battery module in a typical configuration.

INFORMATION CONCERNING LEGAL PROVISIONS AND THE GUARANTEE

DECLARATION OF CONFORMITY

The power supply unit has been manufactured in Poland and its construction is concordant with the provisions of the pertinent standards.

GUARANTEE

The guarantee for the appliance constitutes a separate document, which is attached to the product. This document must meet all formal requirements (e.g.. date of sale, stamp of the seller).

The manufacturer has made every effort to ensure that the offered products are free of defects in materials and workmanship. The liability of the company under the guarantee is limited to the repair or replacement of products containing such defects. The method of removal of defects shall be determined by the manufacturer. The guarantee shall not cover appliances with mechanical damage, which were improperly maintained or used, or which were modified in any way by the user.

Apart from the provisions set forward in the guarantee card, EVER Sp. z o.o. does not provide any guarantees or warranties, including any guarantees of marketability or suitability for a specific application.

Apart from the provisions set forward in the guarantee card, EVER Sp. z o.o. shall not be held liable for any direct, indirect, special, accidental or consequential losses resulting from usage of the power supply unit, even if a warning was given that such losses could occur. The company shall not be held liable for any costs, such as the loss of profits or earnings, equipment, equipment usage, software, data, costs of replacement products, claims of third parties, or for any other costs.

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